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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

MATTHEW R. HYRE ET AL : Art Unit: 1731

Serial No: 10/005,567 : Examiner: Carlos N. Lopez

Filed: December 5, 2001 : Docket No: 5352-05

For: GLASS CONTAINER FORMING MACHINE

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Jean S. Frontuto

Sir:

BRIEF ON APPEAL

This application had a previous Final Rejection, which resulted in the filing of a Notice of Appeal followed by the filing of a Brief On Appeal. Fees were paid for the Notice and the Brief. The Examiner reopened prosecution following the filing of the Brief and has issued a non-final and a second Final Office Action. In response to this second final, applicants filed a second Notice of Appeal on January 29, 2007 and now are filing the second Brief on Appeal. In view of the fact that the Examiner reopened examination following the payment of fees for the first notice and the first Brief, Applicants wonder whether it is appropriate for them to have to pay fees for the second Notice of Appeal and the Second Brief. Applicants, with the filing of the Notice, did not pay the required fee for the second time, and does not believe that a fee is required for this Brief following the second Notice. If these second fees are appropriate, please charge the fee for this Brief to Deposit Account No. 50-0696.

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(1) Real Party In Interest

This application has been assigned to Emhart Glass SA, Hinterbergstrasse 22, P.O. Box 5361, CH-6330 Cham, Switzerland, which is a wholly owned subsidiary of Bucher Industries AG, Murzlenstrasse 80,Ch-8166 Niederweningen, Switzerland.

(2) Related Appeals and Interferences

A Brief on Appeal was filed on December 11, 2006, in a related application Serial No. 10/005,682, filed December 5, 2001.

(3) Status of the Claims

This appeal is from a final rejection dated November 16, 2006 and concerns rejected independent claim 1 and rejected dependent claims 2 and 3. Claims 4-6 stand allowable. This appeal will deal only with claim 1. Claims 2 and 3 will either stand or fall with claim 1.

(4) Status of Amendments

No amendment was filed post issuance of the Final Amendment.

(5) Summary of Claimed Subject Matter

The present invention relates to the formation of glass bottles in an I.S. machine. A glass parison is formed from a gob of molten glass in a blank mold. The blank mold is opened and the formed parison is transferred to the low station where a blow mold is closed around it. A blow head 18 (Fig. 1), which has a blow tube located at its up position 36/Fig. 2, is displaced from a remote position to a position where it rests on top the blow mold 12/Fig. 2 (which locates the blow tube in its correct bottle blowing location). The blow head is then connected to a pressurized air supply 26/Fig. 2 to blow the parison into the shape of the blow mold (the shape of the bottle being formed). This pressure almost immediately blows the parison into a bottle. Pressure continues to be applied and air flow into and from the mold continues through a controlled exhaust in the blow head.

Before blow molds can be opened and the blown bottle removed and displaced to the next location in the process, the surface of the bottle must be cooled or chilled sufficiently so that the chilled bottle will be rigid for such displacement. Heat is transferred from the outer surface of the bottle via contact with the molds and the rate of cooling can be increased by cooling the molds. The internal surface of the formed bottle is cooled by the air flowing from the blow head into the mold and out from the blow head 42/Fig.2. When the bottle is ready for transfer, the blow tube will be located at its up position and the blow head will be retracted to a remote position. The molds are then opened and a takeout 140/Fig. 13 is lowered to grip the bottles and transfer them to a dead plate 240/Fig. 16.

The operation of an I.S. machine is via a 360-degree timing drum. Every 360 degrees, every operation will occur. These operations have traditionally been called events and the standard events of an I.S. cycle are illustrated in Figure 11 of U.S. Patent No. 6,722,158, dated April 20, 2006 (Attachment 1). As shown in this figure, the blow molds close at 229 degrees, the blowhead is “on” at 290 degrees and “final blow” is turned on at 348 degrees. From 290 degrees to 348 degrees “reheat” is occurring

which is the removal of the chill from the parison surface by heat from within the parison so that the parison can be properly blown. These same events are also illustrated in Figure 1 of U.S. Patent No. 3,905,793, dated September 16, 1975 (Attachment 2). From the beginning of the I.S machine, some 80 years ago, these have been the events. Blow head "on" means something - it means that the blowhead - which includes the blow tube - is moved into position so that final blow may be turned on.

In accordance with the invention disclosed in this application, applicants have defined an improved cooling operation while final blow is on - within the bottle while it is formed at the blow station of an I.S. machine. This operation requires displacement of the cooling tube, while the blowhead is at the on position, a number of times, from the up position to a down position and back up to the up position.

Presented below is the sole claim herein being reviewed with index numbers and references to the specification added:

1. A blow head mechanism for blowing a parison in a blow mold of a blow station of an I.S. machine and cooling the blown parison so that a bottle will be formed which can be removed from the blow station comprising

(A blow head mechanism 10/page 4, line 36 blows a parison into the bottle mold form defined in a blow mold)

a blow head assembly,

(18/page 5, line 2)

support means for supporting said blow head assembly,

(an arm 16/page 5, line 1, supports the blow head assembly. This arm is routinely called a support and thus "support means" specifically defines this structure. The same

generic structure was disclosed more than 80 years ago and in fact, the cited Rodriquez-Wong patent uses the phrase "support structure" which is the same thing as support means)

first displacement means for displacing said support means to displace said blow head assembly between a remote "off" position and an advanced "on" position,

(22/a motor - page 5, line 3 - which is coupled to rotate a rotatable vertical post/22, page 5, line 2. This displacement means is generically describing a linear actuator such as a pneumatic motor coupled to the post (which has been around for about eighty years or a profiled actuator such as a servomotor coupled to the post which has been in the patent literature for thirty years and such structure would be recognized as the "displacement means" by any engineer in this field.) The above structures are claimed in the broadest possible way. The "on" position is a well-recognized position - when the blow head is "on", final blow can start.) The specification clearly defines this "on" position as "an advanced "on" position, as shown in figure 1, at which the blow heads engage the top of the molds (Page 5, lines 8-10)".

said blow head assembly including a blow tube selectively displaceable between an up position and a down position,

(36/page 5, line 17 - as disclosed the blow tube is displaceable between an up position and a down position.)

second displacement means for displacing said blow tube from the up position down to the down position and then back up to the up position a plurality of times during the time that the blow head assembly is at the "on" position,

(92/drive member, page 7, line 31,106/motor coupling 106, page 8, line 6, 104/motor, page 8, line 5, control 120/122/124.

Claim 1 very clearly provides that the blow head is at the "on" position while the blow tube is displaced between the up and down locations a number of times.

said second displacement mechanism means including a profiled actuator.

(6) Grounds Of Rejection To Be Reviewed On Appeal

Whether claim 1 is patentable under 35 U.S.C. 103(a) over Rodriquez-Wong in view of Crowder.

(7) Argument

I. CROWDER

Crowder is a three-page article entitled "Electric Drives and Their Controls". Applicants fail to see the relevance of this article. Controlled electronic drives have been around for decades.

II. RODRIQUEZ-WONG

Rodriquez-Wong discloses a traditional blow head that has a blow tube, which is open at the bottom. As the blow head is lowered into operating position, the blow tube, which can be located either at an up, out of the way position, or a down operative position, is simultaneously lowered to its down operative position. With the blow head and blow tube both in the down operative position (the blow head "on" position), the parison will be blown:

"...The blow nozzle, 30 and the blowing head 50, (position B) move downwards. The blowing nozzle, 30, is introduced by the neck of the article E, for blowing or final shaping of the stated article E, while the blowing head, 50, makes contact with the upper part of mold M, to form a pressure chamber during the final blowing of the article."

This is how a blow head works. A closed chamber is defined and with the blow head and blow tube located at the "on" position, pressure is turned on.

In Rodriquez-Wong, when this process is completed (with the blow tube still at its on or operative position, the blowing head has an upward movement while the nozzle

30 keeps supplying air to the recently formed bottle. Rodriquez-Wong is pointing out that unlike conventional blow heads, this combined takeout/blowhead does not turn the air off when the blowhead is to be retracted since the blow tube can remain in position until the take out tongs of the combined blowhead/takeout close around the formed bottle. Following blow head retraction, the molds are opened, the grippers of the takeout are closed below the finish of the formed bottle, and the blow tube is then retracted to its up or out of the way position:

> "the blow mold . . . opens and the tongs . . . close around the neck of the container . . . while the nozzle . . . carries out an upward movement disengaging itself from the neck of the container."

While Rodriquez-Wong does not say when air is turned off, such final blow air is conventionally turned off before the blow tube is elevated since air costs money and since noise is an issue within the glass plant. Air would remain off until the blow head again is located on top of the blow molds and the blow tube is lowered to the operative position since you do not want pressure until it is time to blow the parison.

Rodriquez-Wong accordingly discloses a conventional blowhead-blow tube wherein the blow tube has a single operating position - the blow tube down position. Air will be turned on and off at this position. The blow tube never moves downwardly from its down, operative, position following blow head "on". The blow tube does not oscillate during the time when the parison is blown and cooled. The blow tube is displaced to its remote position so that the blow head/takeout can be displaced without damaging the blow tube.

III. CLAIM 1 IS PATENTABLE

The Examiner rejects claim 1 arguing that "the 'off' and 'on' positions are deemed to be when the displacement means is on or off the blow mold wherein the

blow tube of Rodriquez-Wong is capable of being moved up and down a plurality of times". The first part of this argument corresponds to claim 1 wherein it defines

"first displacement means for displacing said support means to displace said blow head assembly between a remote "off" position and an advanced "on" position",

however, claim 1 specifically provides for

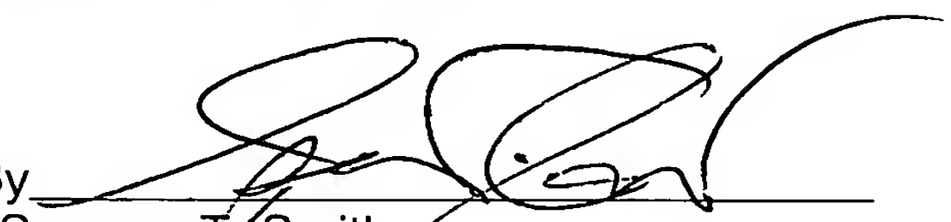
"second displacement means for displacing said blow tube from the up position to the down position and then back up to the up position a plurality of times during the time that the blow head assembly is at the "on" position,"

Claim 1 clearly defines movement of the blow tube when the blow head is at the "on" position - not as the Examiner argues - movement of the blow tube before the blow head is at the "on" position.

The Examiner argues that "claim 1 recites a plurality of functional features for which do not provide structural distinction to the combined teachings of the above references". This is in error. Applicant claims a "second displacement means" and describes the function of that second displacement means. The Examiner has not cited structure which anticipates this structure. No reference teaches "second displacing means for displacing said blow tube from the up position to the down position and then back up to the up position a plurality of times during the time that the blow head assembly is at the "on" position. . . ."

Accordingly, the examiner's rejection of claim 1 under 35 U.S.C. 103(a) should be reversed.

Respectfully submitted,

By 

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CLAIMS APPENDIX

1. A blow head mechanism for blowing a parison in a blow mold of an I.S. machine and cooling the blown parison so that a bottle will be formed which can be removed from the blow mold comprising

a blow head assembly,

support means for supporting said blow head assembly,

first displacement means for displacing said support means to displace said blow head assembly between a remote "off" position and an advanced "on" position,

said blow head assembly including a blow tube selectively displaceable between an up position and a down position,

second displacement means for displacing said blow tube from the up position to the down position and then back up to the up position a plurality of times during the time that the blow head assembly is at the "on" position,

said second displacement means including a profiled actuator.

2. A blow head mechanism according to claim 1, wherein said profiled actuator is a servomotor,

3. A blow head mechanism according to claim 1, wherein the profile of the profiled actuator displaces the cooling tube in coordination with the cooling requirements of the blown parison/formed bottle.

4. A blow head mechanism according to claim 1, wherein the blown parison has an upper neck portion and a lower body portion, said profiled actuator including a displacement profile which will displace the blow tube from the up position to the location where the upper neck portion meets the lower body portion at an average velocity higher than the average velocity at which the blow tube will be displaced from the location where the upper neck portion meets the lower body portion to the bottom of the blown parison.

5. A blow head mechanism according to claim 4, wherein said displacement profile will cause said blow tube to dwell at the bottom of the blown parison for a selected period of time.

6. A blow head mechanism according to claim 5 wherein the displacement profile will displace the blow tube from the down position to the location where the upper neck portion meets the lower body portion at said average lower velocity and will displace the blow head tube from the location where the upper neck portion meets the lower body portion to the up position at said higher average velocity.

EVIDENCE APPENDIX

Sheet 11 of 21 - U.S. Patent No. 6,722,158;

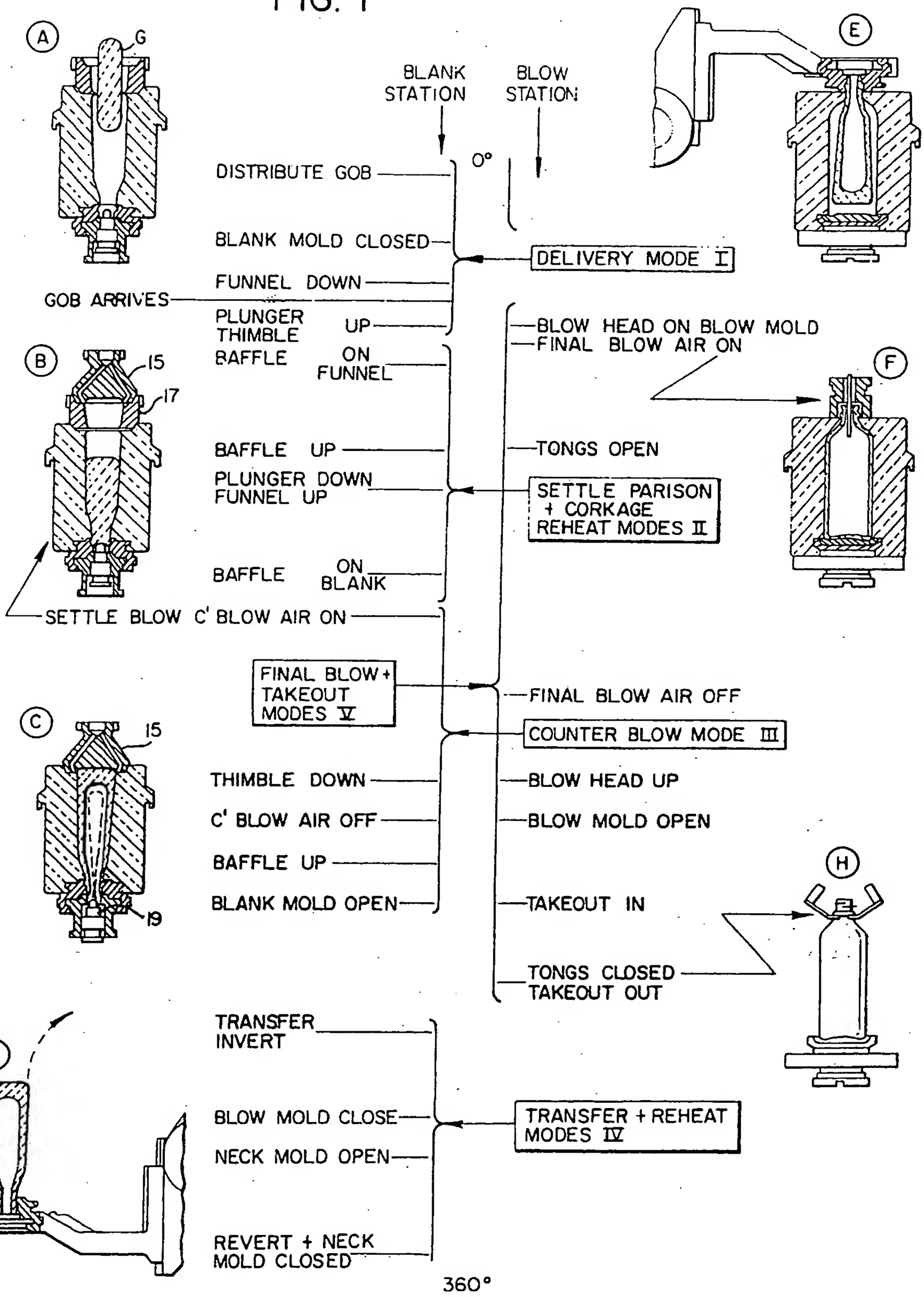
Sheet 1 of 7 - U.S. Patent No. 3,905,793.

FIG. 11

	G	H
1 EVENTS	ON	OFF
2 GOB INTERCEPTOR	334	14
3 BLANKS CLOSE	324	130
4 BLANKS OPEN	130	321
5 PLUNGER UP	33	123
6 FIRST BAFFLE	9	125
7 PLUNGER DOWN	127	327
8 FUNNEL	1	150
9 SETTLE BLOW	1	1
10 PLUNGER COOLING	150	260
11 INVERT	200	260
12 NECKRING OPEN	274.5	283
13 REVERT	282	172
14 MOLDS CLOSE/OPEN	229	170
15 MOLD COOLING	10	150
16 FLOWHEAD	290	113
17 FINAL BLOW	348	120
18 TAKE OUT IN	137	197
19 TONGS CLOSE	178	78
20 TAKE OUT OUT	197	90

PATENTED SEP 16 1975

FIG. 1



RELATED APPEALS APPENDIX

None